

WHAT IS CLAIMED IS:

1. A camera system comprising a lens apparatus with an image-taking optical system including a focus lens unit and a camera on which the lens apparatus is mountable, the camera system comprising:

a focus detection unit which detects a focusing state of the image-taking optical system;

a driving unit which drives the focus lens unit; and

a controller which controls the driving speed of the focus lens unit through the driving unit and controls the focus detection unit to perform a focus detection operation at least once while the focus lens unit is moved,

wherein the controller sets the driving speed of the focus lens unit at the time of at least a final focus detection operation by the focus detection unit while the focus lens is moved toward an in-focus position, to a speed decelerated from the driving speed before the final focus detection operation.

2. The camera system according to claim 1, wherein the controller controls the focus detection unit to perform the focus detection operation while the focus lens unit is moved at a constant speed.

3. The camera system according to claim 1, further comprising a photometric unit which measure brightness of an object,

wherein the controller determines the driving speed of the focus lens at the time of the final focus detection operation based on the photometric result by the photometric unit and information on the amount of movement of a focal point with respect to a unit amount of movement of the focus lens unit.

4. The camera system according to claim 1, wherein the controller determines the timing of the deceleration of the focus lens unit based on the driving speed of the focus lens unit at the time of the final focus detection operation and the driving speed of the focus lens unit before deceleration down to the driving speed at the time of the final focus detection operation.

5. A camera on which a lens apparatus is mountable, the lens apparatus comprising an image-taking optical system which includes a focus lens unit, the camera comprising:

a communication unit which communicates with the lens apparatus;

a focus detection unit which detects a focusing state of the image-taking optical system;

a driving unit which drives the focus lens unit; and

a controller which controls the driving speed of the focus lens unit through the driving unit and through communications with the lens apparatus through the communication unit and controls the focus detection unit to

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perform a focus detection operation at least once while the focus lens unit is moved,

wherein the controller sets the driving speed of the focus lens unit at the time of at least the final focus detection operation by the focus detection unit while the focus lens unit is moved toward an in-focus position, to a speed decelerated from the driving speed before the final focus detection operation.

6. The camera according to claim 5, wherein the controller controls the focus detection unit to perform a focus detection operation while the focus lens unit is moved at a constant speed.

7. The camera according to claim 5, further comprising a photometric unit which measures brightness of an object,

wherein the controller determines the driving speed of the focus lens unit at the time of the final focus detection operation based on the photometric result obtained from the photometric unit and information on the amount of movement of focal point with respect to the unit amount of movement of the focus lens unit obtained from the lens apparatus through communications.

8. The camera according to claim 5, wherein the controller determines the timing of the deceleration of the focus lens unit based on the driving speed of the focus lens unit at

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the final focus detection operation and the driving speed of the focus lens unit before deceleration down to the driving speed at the final focus detection operation.

9. A camera comprising:

an image-taking optical system including a focus lens unit;

a focus detection unit which detects the focusing state of the image-taking optical system;

a driving unit which drives the focus lens unit; and

a controller which controls the driving speed of the focus lens unit through the driving unit and controls the focus detection unit to perform a focus detection operation at least once while the focus lens unit is moved,

wherein the controller sets the driving speed of the focus lens unit at the time of at least the final focus detection operation by the focus detection unit while the focus lens is moved toward in-focus position, to a speed decelerated from the driving speed before the final focus detection operation.

10. The camera according to claim 9, wherein the controller controls the focus detection unit to perform a focus detection operation while the focus lens unit is moved at a constant speed.

11. The camera according to claim 10, further comprising:

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a photometric unit which measures brightness of an object; and

a memory which stores information on the amount of movement of a focal point with respect to a unit amount of movement of the focus lens unit,

wherein the controller determines the driving speed of the focus lens unit at the time of the final focus detection operation based on the information on the amount of movement of the focal point stored in the memory and the photometric result obtained from the photometric unit.

12. The camera according to claim 10, wherein the controller determines the timing of the deceleration of the focus lens unit based on the driving speed of the focus lens unit at the time of the final focus detection operation and the driving speed of the focus lens unit before deceleration down to the driving speed at the time of the final focus detection.

13. A lens apparatus which is mountable to a camera detecting at least once the focusing state of the image-taking optical system through a focus detection unit while the focus lens unit is moved, the lens apparatus comprising:

an image-taking optical system including the focus lens unit;

a driving unit which drives the focus lens unit; and

a controller which controls the driving speed of the

focus lens unit through the driving unit,

wherein the controller sets the driving speed of the focus lens unit at the time of at least the final focus detection operation by the focus detection unit while the focus lens unit moves to an in-focus position, to a speed decelerated from the driving speed before the final focus detection operation.

14. The lens apparatus according to claim 13, wherein the controller controls the focus detection unit to perform a focus detection operation while the focus lens unit is moved at a constant speed.

15. The lens apparatus according to claim 13, further comprising a memory which stores information of an amount of movement of a focal point with respect to a unit amount of movement of the focus lens unit,

wherein the controller controls the driving of the focus lens unit according to the driving speed of the focus lens unit at the time of the final focus detection operation determined by the camera or the lens apparatus based on the information of the amount of movement of the focal point stored in the memory and the photometric result of the object obtained by the camera.

16. The lens apparatus according to claim 13, wherein the controller determines the timing of performing the

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deceleration of the focus lens unit based on the driving speed of the focus lens unit at the time of the final focus detection operation and the driving speed of the focus lens unit before deceleration down to the driving speed at the time of the final focus detection operation.